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### REMARKS

Claims 1-4 are now pending in the application. Claim 1 is currently amended, and claims 2-4 are previously presented.

The amendment to claim 1 deletes the recitation of VRRP. Therefore, the applicant submits that new matter has not been added to the application by way of the currently amended claims. The Examiner is respectfully requested to reconsider and withdraw the rejection in view of the amendments and remarks contained herein.

**Since the amendments merely delete a preamble recitation which was not considered by the Examiner in applying the prior art, it is respectfully submitted that the amendment does not raise new issues, and examination thereof is respectfully requested.**

### REJECTION UNDER 35 U.S.C. § 112

The Examiner points out that the claimed subject-matter of the present invention is based on VRRP, but that the summary of the invention cites that the "VRRP" is only used in routers but not in interfaces. Thus, the Examiner alleges that it is contradictory that the VRRP is applied for interfaces in a router as recited in the claims 1-4. Applicant has therefore amended independent claim 1 (and corresponding passages in the specification and abstract) to delete the recitation "with Virtual Router Redundancy Protocol (VRRP)."

Although the specification has been amended to overcome the rejection, the applicant respectfully submits that actually, the solution proposed by the present invention expands existing VRRP functions to make a protocol satisfy requirements for both router backup and interface backup of one router (first paragraph of the "summary of the invention" part of the present invention). Thus, the Examiner is incorrect that it is contradictory to describe the VRRP as being applied for interfaces in a router, as originally claimed.

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**REJECTION UNDER 35 U.S.C. § 102**

The rejection of claims 1-3 under 35 USC 102(e) as being unpatentable over Shinomiya (US 2003/0037165) is respectfully traversed for the following reasons:

Amended independent claim 1 discloses a method for implementing a router interface backup. Specifically, amended independent claim 1 recites:

connecting multiple interfaces of a router to a single LAN and adding the interfaces to a single multicast group;  
configuring a single virtual router number and a single virtual IP address to said interfaces to make said interfaces join a single virtual router;  
selecting a main interface and backup interfaces according to their respective priorities among said interfaces; and  
sending VRRP multicast packets from the main interface to all backup interfaces periodically; if a priority involved in a just received VRRP multicast packet is zero or the backup interfaces have not received any VRRP multicast packet within a predetermined period, one backup interface becoming the main interface and replacing the original main interface.

In contrast, the Shinomiya patent at best discloses a router redundancy using VRRP. A virtual router is constituted by a plurality of routers. One of these routers is assigned as the mast router and transmits an advertisement packet indicating the router itself being the master router to the whole routers except the master router which constitute the virtual router. The backup routers monitor an advertisement packet to confirm that the master router is working. If an advertisement packet is not received for a predetermined period, one of the backup routers may function as the master router. (See Shinomiya, paragraphs [0043], [0045], [0046], [0069] and [0070]).

According to the Examiner, the interface and a router recited in the claims are equivalent to each router and the virtual router of Shinomiya, respectively, because specific descriptions for the interfaces and the routers are not recited in the claims. In reply, the Applicant respectfully submits that this understanding of Shinomiya is incorrect and that the interface recited in the claims is not equivalent to the router of Shinomiya because, as described in amended independent claim 1, the interfaces are multiple interfaces of one router. In other words, the Examiner has equated one of the interfaces of the router to the router itself. It is apparent to a person skilled in the art that an interface of a physical existing router is not equivalent to that physical existing router. Therefore,

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Applicant respectfully submits that Shinomiya at least fails to teach or suggest the interfaces and the virtual router as described in amended claim 1.

Instead, according to Shinomiya, for each router, there is only one interface connected to a certain LAN and *no other interfaces of the router are connected to the same LAN*. (See Shinomiya, paragraphs [0048]). Thus Applicant respectfully submits that Shinomiya fails to teach or suggest connecting multiple interfaces of a router to a single LAN and adding the interfaces to a single multicast group as described in amended claim 1.

In amended claim 1, multiple interfaces of one router are connected to a single LAN. Thus, there is always more than one interface of one router connected to a single LAN. Thus amended claim 1 implements backup between interfaces of one router. In case of one router is used in a signal LAN, amended claim 1 implements backup between interfaces of the router, which avoids network failure when one interface of the router fails. In cases of multiple routers being connected to a single LAN, at least one router may also have more than one interface connected to the LAN, which improves the reliability of the network. *Compared with Shinomiya in which different interfaces of one router are connected to different LANs, amended claim 1 connects different interfaces of one router to a single LAN, and thus the entire networking structure of amended claim 1 differs from that of Shinomiya.*

For at least the above reasons, Applicant respectfully submits that Shinomiya fails to teach or suggest each and every limitation of amended claim 1. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

**REJECTION UNDER 35 U.S.C. § 103**

The rejection of claim 4 under 35 USC 103(a), as being unpatentable over Shinomiya. Is respectfully traversed on the grounds that claim 4 incorporates the limitations of amended claim 1 which are not disclosed by Shinomiya. In addition, Shinomiya fails to disclose or suggest the additional technical feature of claim 4 that a single multicast group may include at least two routers, and multiple interfaces of each router may be connected to a single LAN. For similar reasons as

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discussed above, Shinomiya at least does not disclose connecting multiple interfaces of each router to a single LAN.

Furthermore, The objectives of Shinomiya's arrangement and that of the claimed invention are not the same. Shinomiya aims at providing router backup and discloses a virtual router consisting of a plurality of routers. However, amended claim 4 aims at providing a method for implementing router interface backup of one router in order to make a protocol satisfy requirements for both router backup and interface backup of one router. Consequently, a skilled person in the art would have had no obvious reasons to modify the arrangement of Shinomiya so that multiple interfaces of one router are connected to a signal LAN.

#### Conclusion

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Expedited passage of the application to issue is therefore requested.

Respectfully submitted,

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